Effektif administrators guide

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Effektif GmbH

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CHAPTER 1

Introduction

This is the Effektif administration manual. It will provide you with information to setup the Effektif system on your own server infrastructure. Effektif officially supports Microsoft Windows Server 64Bit and Debian Stable 64Bit.

It is possible to setup Effektif also on other Linux distributions. However, the instructions in this manual are only tested for Debian. Probably, you will have to adjust the instructions to your system, but the used software should work on most distributions.

1.1 Software components

In order to setup and work with Effektif, several software components are necessary.

1.1.1 Effektif system

The Effektif system refers to the application that you will run on your server and that consists of a Java web archive (WAR) that is deployed on Tomcat and a MongoDB database.

1.1.2 Apache Tomcat

The Apache Tomcat is an application server that hosts the Effektif web application. The Effektif web application serves the Effektif application to the users' browser and it also includes the backend of the Effektif system.

1.1.3 MongoDB

MongoDB is a document-oriented database system. It is the only database system that is supported by Effektif. More detailed information about MongoDB can be found in the MongoDB documentation: http://docs.mongodb.org/v2.4/

1.1.4 Mail server (SMTP)

The mail server is necessary to send notifications and invitation requests to users. Any server that is accessible via SMTP can be used.

1.1.5 Web browser

Effektif runs as a web application. The user interface can be accessed using a modern web browser. More details about the supported browsers can be found in the section *Web browser*.

1.2 Naming conventions

Within this adminstrators guide several placeholders are used to increase the readability.

`$EFFEKTIF_HOME`	Refers to the directory that contains the unzipped content of the downloaded effektif-{version}.zip.
`$TOMCAT_HOME`	Refers to the directory where your Apache Tomcat is installed. This directory contains the folders `webapps` and `conf`. On Linux for example the directory might be located in `/var/lib/tomcat7`.
`$MONGO_HOME`	Refers to the directory where your MongoDB is installed.

Those placeholders are used within example command line code. You need to replace those placeholders with the appropriate paths on your system.

CHAPTER 2

Installation

This section will guide you through the setup of Effektif. Simply follow the subsections step by step. If you have already installed Effektif and want to update the system to a newer version, you can skip this chapter.

2.1 System requirements

2.1.1 Operating system

The Effektif system can be deployed on different operating systems. Officially supported are the following operating systems:

- Debian Stable Release 64Bit
- Microsoft Windows Server 64Bit

Important: In general, it is possible to install Effektif on other Linux distributions. However, the installation process can differ from the following instructions and the Effektif team cannot offer official support in case of an installation problem.

You are advised to use a 64Bit operating system in order to be able to assign more than 1.5GB of heap space to the Java VM. Furthermore, MongoDB is limited to 2GB of content on 32Bit operating systems.

2.1.2 Hardware requirements

The described installation in this adminstration guide will setup the database and the application server on the same system. However, it is also possible to setup the database and application server on separate systems. For instance, if you have already an infrastructure that provides MongoDB instances for different applications, you can simply reuse your infrastructure and just create another database for Effektif.

The minimal hardware requirements for the combined system of application and database server are:

- 8 GB RAM
- 4 core CPU
- 50 GB disk space

The required disk space depends on how you will use Effektif. 50 GB should be sufficient disk space for most scenarios. However, if you plan on using a lot of file uploads in your processes the required disk space depends largely on the number and size of the uploaded files. Be aware, the required disk space does not include the space necessary for backups. If you plan on storing the backups on the same server, you should add more.

2.1.3 Other systems

The Effektif system relies on a SMTP mail server to send notifications and invite users. You can simply reuse any existing mail server in your organization that supports access via SMTP.

2.1.4 Software requirements

In order to run Effektif on your server, you will need to install some additional software. Depending on your deployment strategy (combined or separate system for application and database), you have to install the following software requirements either on the same server or the respective separate servers.

The following sections contain detailed instructions on how to install and configure the additional software components.

The application server requires the following additional software:

- Java: Oracle JSE version 8 (1.8.0_45+) or Oracle JSE version 7 (1.7.0_67+)
- Apache Tomcat 7 64 Bit

The database server requires the following additional software:

- MongoDB version 2.4.x

Important: MongoDB version 2.6.x or higher is not yet officially supported by Effektif. Please, make sure to install version 2.4.x.

2.1.5 Web browser

A current web browser is necessary on every client that shall display the Effektif user interface. The following list shows the supported web browsers and versions:

- Google Chrome 23 or newer
- Mozilla Firefox 10 or newer
- Microsoft Internet Explorer 9 or newer
- Apple Safari 5 or newer

2.2 Unpack Effektif

Unzip the effektif-{version}.zip to a directory of your choice, e.g. `/yourlocation/effektif-{version}` In the rest of this guide, we'll refer to the effektif home directory as `$EFFEKTIF_HOME`. The directory will contain the following files:

- *.sh - Linux shell scripts
- db - directory that contains MongoDB configuration files
  - mongodb.conf - configuration file for Linux
  - mongod.cfg - configuration file for Windows
- effektif - directory
  - ROOT - this directory contains the web application

On Linux systems you need to make the scripts executable with the `chmod` command like this:

```
chmod a+x $EFFEKTIF_HOME/*.sh
```

2.3 Install Java

The application server requires a Java runtime environment in order to execute the Java backend of Effektif. Therefore, you have to install Java 8 64Bit or Java 7 64Bit on the application server. You can download a respective installation package for your operating system here:

https://www.java.com/en/download/manual.jsp

2.4 Install Tomcat

The Java backend of the Effektif system is executed using Apache Tomcat 7. Effektif does not support any older or younger versions of Tomcat than version 7. Furthermore, you have to use a 64 Bit version of Apache Tomcat 7.

You can download the latest installation files for different operating systems from the following site:

http://tomcat.apache.org/download-70.cgi

In general, please make sure the user executing the Tomcat has read / write permissions for the folder `$TOMCAT_HOME/webapps` and the containing subfolders.

2.4.1 Windows

If you are using a Windows system, the download site offers a Windows Service Installer ("32-bit/64-bit Windows Service Installer"). This installer will install the Apache Tomcat as a Windows service which can be started, stopped and configured over a graphical user interface. The service installer is the recommended way for Windows users to install the Tomcat server. Please, make sure you execute the installer with administrator privileges.

Furthermore, it is recommended to install the Apache Tomcat into a root folder on `C:\`.

2.4.2 Debian

If you are using Linux, you might consider installing Apache Tomcat using a packet manager. In case of Debian, you can use the Advanced Packaging Tool (APT) and execute the following command:

```
apt-get install tomcat7
```

2.5 Configure Tomcat

This section will point the configuration options that are required to run Effektif. However, Tomcat offers more configuration options that can be found in the official documentation:

http://tomcat.apache.org/tomcat-7.0-doc/

2.5.1 Java options

There are some Java options that need to be configured before starting the Tomcat server. These options are configured using the `JAVA_OPTS` environment variable. It should contain the following values:

`-Xms1536m`	minimum RAM, should be at least 1.5GB
`-Xmx2048m`	maximum RAM, should be at least 2GB but more is recommended
`-Dfile.encoding=UTF-8`	sets UTF-8 as Apache Tomcats default encoding mechanism
`-XX:PermSize=128m`	initial permanent generation space in MB
`-XX:MaxPermSize=256m`	maximum permanent generation space in MB

In order to allocate sufficient RAM to the Tomcat server you have to set the options Xms and Xmx followed by the number of MB allocated and a literal 'm'. `Xms` defines the initial / minimum amount of RAM that is used

and `Xmx` the allowed maximum. You are advised to allocate at least 2GB of RAM to the Tomcat. However, it is recommended to use more RAM. For example, if you want to assign 4GB of maximum RAM the option would be `-Xmx4096m`.

The values for the permanent generation space have to be increased as well, these are defined by the values `-XX:PermSize=128m` and `-XX:MaxPermSize=256m`.

2.5.2 Windows

If you installed Tomcat using the Windows service installer, you can open the configuration dialog by opening the Windows start menu and selecting `Program Files\Apache Tomcat\Configure Tomcat`.

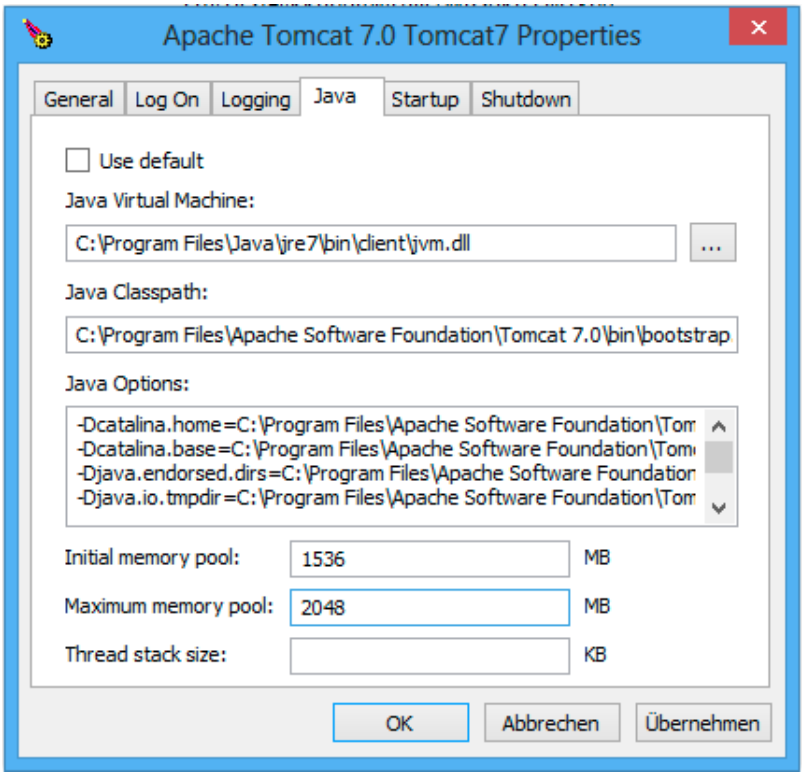


Figure 2.1: The Java tab of the Tomcat configuration dialog

The tab Java offers the possibility to set the options and define the memory pool (minimum and maximum RAM usage). Fill in the values for Xms and Xmx into the fields for memory pool and add the other options to the text area labeled as Java Options.

2.5.3 Debian

One way to define the `JAVA_OPTS` under Debian and other Linux distributions is to create the file `setenv.sh` in the Tomcat 7 `/bin/` directory. This directory contains also other files like the `catalina.sh`, the `startup.sh` or the `shutdown.sh` und is for instance located in `/usr/share/tomcat7` or a similar directory. Simply create or extend any existing setenv.sh file and add the line for `the JAVA_OPTS`:

```
export JAVA_OPTS="$JAVA_OPTS -Xms1536m [... add the other options]"
```

In case you have created a new `setenv.sh` file, you have to make sure it is executable using the `chmod` command:

```
chmod a+x setenv.sh
```

2.5.4 Setup the Tomcat connector

By default the Tomcat server will start up using port 8080 and 8005. Port 8080 is used for serving the Effektif web application. Port 8005 is used to shutdown the Tomcat instance. You can change the port in the server.xml which is located in `$TOMCAT_HOME/conf/server.xml`.

Important: If the server is running on any other port than port 80, your users will have to enter the port in the address line of the web browser, e.g. http://effektif.yourdomain.com:8080/.

Locate the HTTP connector and change the value of port to your preferred port. Furthmore, make sure the connector contains the entry `URIEnconding="UTF-8"`. For example, the connector could look like this:

```
<Connector port="80" protocol="HTTP/1.1"
    connectionTimeout="20000"
    redirectPort="8443"
    URIEncoding="UTF-8" />
```

2.6 Copy the Effektif webapp

The Effektif webapp which can be found in the directory `$EFFEKTIF_HOME/effektif/ROOT` needs to be copied to the Tomcat's webapps folder. Therefore remove any files and folders that are located in `$TOMCAT_HOME/webapps` and copy the ROOT folder to `$TOMCAT_HOME/webapps/`.

The Effektif application needs to run as the ROOT application in the Tomcat. Therefore, running it in parallel with another application that requires to run as the ROOT application in the same Tomcat is currently not possible.

2.7 Install MongoDB

MongoDB is the only database system currently supported by Effektif. In case, you have already an infrastructure that can provide a MongoDB version 2.4.x instance, simply create a new instance for Effektif and skip to the section *Configure MongoDB*. Otherwise go on with the installation instructions.

General information about installing MongoDB on different operating systems can be found on:

http://docs.mongodb.org/v2.4/installation/

In case you are using Linux, you have the possibilities to install MongoDB using either a package manager like apt-get or downloading the binaries directly. It is recommened to use the package manager because it will also setup respective scripts that allow you to start and stop the server easily. However, you have to make sure the correct version is installed. Subsection *Debian* explains in more details how to setup MongoDB on Debian and might work as an example for other Linux distributions.

2.7.1 Remarks for downloading the binaries

Effektif does not yet support MongoDB 2.6.x. Therefore, you have to download the latest MongoDB 2.4.x release, which will be listed under previous releases. You can find the respective version for your operating system here:

http://www.mongodb.org/downloads

Please, make sure to download the 64Bit version of MongoDB. The 32Bit version has a limited size of 2GB for stored content and, therefore, cannot be used in productive systems.

2.7.2 Windows

Windows requires you to download the binaries. Consider the remarks of the last subsection when doing so. If you are using any version older than Windows Server 2008 R2, you have to download the 64Bit legacy release.

You can find more details about installing MongoDB on Windows in the documentation:

http://docs.mongodb.org/v2.4/tutorial/install-mongodb-on-windows/

When you finished downloading MongoDB follow the next steps:

1. Extract the content of the downloaded archive into `C:\MongoDB` or any directory of your choice.
   - The MongoDB directory should contain directly the extracted bin directory.
   - Important: The whole path shouldn't contain any whitespaces. Otherwise the service configuration will not work.
2. Create a data directory for the MongoDB files, e.g. `C:\MongoDB\data`.
   - This directory will need the most disk space. Make sure the drive has sufficient disk space.
3. Create a logs directory for the MongoDB log files, e.g. `C:\MongoDB\logs`.
4. Copy the file `$EFFEKTIF_HOME\db\mongod.cfg` to your MongoDB directory `C:\MongoDB\mongod.cfg` and edit the file.
   - The dbpath needs to contain the absolute path to the data directory, e.g. `C:\MongoDB\data`.
   - The logpath needs to contain the absolute path to the log file, e.g. `C:\MongoDB\logs\mongodb.log`. The log file will be created once MongoDB is started.
   - See section *Configure MongoDB* for more information about the other configuration values.
5. Open the command line cmd with administrative privileges and execute the following command. Make sure to use absolute paths and replace them with the matching ones on your system.
   - `C:\MongoDB\bin\mongod.exe --config C:\MongoDB\mongod.cfg --install`
   - The command line should tell you that the service MongoDB was properly created.
   - You can unregister the service again by executing: `C:\MongoDB\bin\mongod.exe --remove`
   - The registered service should start MongoDB automatically on startup of Windows.
6. You can now start MongoDB by executing the following command: `net start MongoDB`
   - If this command fails with the error 1053 or 2186, make sure that the configuration file contains absolute paths. Furthermore, the paths must not have any whitespaces and should not be located in any directory that requires admin privileges.
   - You can stop MongoDB by calling: `net stop MongoDB`
   - The service is also listed in the services window that can be opened by running `services.msc`.

2.7.3 Debian

If you are installing MongoDB on a Debian system, you are advised to use the method described in the MongoDB configuration:

http://docs.mongodb.org/v2.4/tutorial/install-mongodb-on-debian/

For convenience reasons the script `$EFFEKTIF_HOME/mongodb.install.debian.sh` already wraps all necessary commands to install the correct version of MongoDB using apt-get. Simply execute it from the command line by opening `$EFFEKTIF_HOME` and calling:

```
sudo ./mongodb.install.debian.sh
```

This will add the MongoDB repositories to your package sources and install the version 2.4.x of MongoDB. You can now simply start and stop the MongoDB server by calling

```
sudo /etc/init.d/mongodb start
```

or

```
sudo /etc/init.d/mongodb stop
```

The server will use the default configuration file `/etc/mongodb.conf`. See the next subsection for more information on how to configure MongoDB for Effektif and create the required user. Be aware, the installation probably started the MongoDB server already. You will need to restart the MongoDB server when you edit the configuration.

2.8 Configure MongoDB

In order to run MongoDB properly, some configuration options have to be defined. The easiest solution is to create a configuration file and link this configuration file when starting MongoDB with the option `--config`.

If you installed MongoDB under Windows using the method in the last section, you have already copied the predefined configuration file and adjusted the values for dbpath and logpath to your system. Then your configuration file contains already all necessary values.

If you installed MongoDB under Linux using apt-get, e.g. by following the instructions in the last section, there should be a respective configuration file `/etc/mongodb.conf`. Edit this configuration file. The properties dbpath and logpath should be defined already. It is recommened to set the properties logpath and auth to true. Furthermore, you will need to add the entry `setParameter=textSearchEnabled=true`.

In any other case make sure the configuration file contains the following properties.

`dbpath`	Defines the directory where the database files are stored.
`logpath`	Defines the file that will contain the logging output.
`logappend`	Indicates that new logs will be appended to an existing log file after restarting the server, if set to true.
`setParameter`	set the value to `textSearchEnabled=true`
`auth`	(optional) Turns authentication on, if set to true. It is advised to turn authentication on in case the MongoDB instance can be accessed over the network.

For more configuration options, see http://docs.mongodb.org/v2.4/reference/configuration-options/.

2.8.1 Add a database user for Effektif

Effektif requires a MongoDB user in the admin database that has the following roles:

`dbAdminAnyDatabase`	
`readWriteAnyDatabase`	
`clusterAdmin`	This role will allow you to list all databases. This becomes necessary if you plan on using the user credentials when editing any database content with a tool like Robomongo. Furthermore, it is necessary for creating backups.
`userAdminAnyDatabase`	This role is required for backups.

The user will access the databases for Effektif. Effektif will create two databases, one for the user and workflow data, and one for uploaded files. The name of the first database can be configured in the Effektif configuration file. The name of the second database is derived from the name of the first one by adding "-files". For instance, if you define the database name "effektif", the databases "effektif" and "effektif-files" will be created.

In general, if you want to create a new user in MongoDB you will need to authenticate with an existing user that has the role userAdmin or userAdminAnyDatabase. There is an exception for a fresh MongoDB setup. It will allow you to create the first user from localhost without any authentication. The following examples will show you how to create a new user using the credentials of an admin user and how to do it without any credentials in case of a new MongoDB.

In order to add a new user to MongoDB, the MongoDB server has to be running. The following subsections will show you how to create the Effektif database user using the command line. Alternatively, you can use a GUI application like Robomongo to create the database user. Section *How to add the Effektif MongoDB user with Robomongo* explains how to setup the database user with Robomongo.

Windows

1. Open the command cmd and go to your MongoDBbin directory, e.g. by executing: `cd C:\MongoDB\bin`
2. If you have an admin user, create the Effektif user by executing:
   - `mongo.exe admin -u admin -p <enterYourAdminPasswordHere> --eval "db.addUser( { user: 'effektif', pwd: '<enterEffektifPasswordHere>', roles: ['dbAdminAnyDatabase', 'readWriteAnyDatabase', 'clusterAdmin', 'userAdminAnyDatabase'] } )"`
   - Replace <enterAdminPasswordHere> with the password, you have defined for the admin user.
   - Replace <enterEffektifPasswordHere> with the password for the new Effektif user. As you can see the user name is effektif.
3. If you have a new MongoDB and no admin user, create the Effektif user by executing:
   - `mongo.exe admin --eval "db.addUser( { user: 'effektif', pwd: '<enterEffektifPasswordHere>', roles: ['dbAdminAnyDatabase', 'readWriteAnyDatabase', 'clusterAdmin', 'userAdminAnyDatabase'] } )"`
   - Replace <enterEffektifPasswordHere> with the password for the new Effektif user. As you can see the user name is effektif.
4. You can verify the creation of the new Effektif user by executing:
   - `mongo.exe admin -u effektif -p <enterEffektifPasswordHere> --eval "db.system.users.find({ user: 'effektif'}).forEach(function(u) {printjson(u)});"`
   - On the command line you will see the user information including the four assigned roles.

Debian

If you have installed MongoDB using a package manager, the binaries should be available on the path. Otherwise, open the directory with the MongoDB binary files and follow the instructions.

1. If you have an admin user, create the Effektif user by executing:
   - `mongo admin -u admin -p <enterYourAdminPasswordHere> --eval "db.addUser( { user: 'effektif', pwd: '<enterEffektifPasswordHere>', roles: ['dbAdminAnyDatabase', 'readWriteAnyDatabase', 'clusterAdmin', 'userAdminAnyDatabase'] } )"`
   - Replace <enterAdminPasswordHere> with the password, you have defined for the admin user.
   - Replace <enterEffektifPasswordHere> with the password for the new Effektif user. As you can see the user name is effektif.
2. If you have a new MongoDB and no admin user, create the Effektif user by executing:
   - `mongo admin --eval "db.addUser( { user: 'effektif', pwd: '<enterEffektifPasswordHere>', roles: ['dbAdminAnyDatabase', 'readWriteAnyDatabase', 'clusterAdmin', 'userAdminAnyDatabase'] } )"`
   - Replace <enterEffektifPasswordHere> with the password for the new Effektif user. As you can see the user name is effektif.
3. You can verify the creation of the new Effektif user by executing:
   - `mongo admin -u effektif -p <enterEffektifPasswordHere> --eval "db.system.users.find({ user: 'effektif'}).forEach(function(u) {printjson(u)});"`

- On the command line you will see the user information including the four assigned roles.

Once the Effektif user is created, its credentials have to be added to the Effektif configuration file to the properties `effektif.mongodb.username` and `effektif.mongodb.password`. Section *Update the Effektif configuration file* explains how to update the configuration file.

2.8.2 Backup and restore

You are advised to do regular backups of the MongoDB database to prevent a complete data loss in case of a system failure. The Effektif system will NOT backup the user data on its own. Section *Backup* explains in details how to set up backups for MongoDB properly. Furthermore, section *Restore* explains how you can restore an older version of the user data using one of the backups.

2.9 Configuring Effektif

2.9.1 Install the license file

Along with the Effektif application you have received the Effektif license file license.xml. Before you can start the Effektif system, you have to add the license file to the application. Therefore, copy the license file into the directory `$TOMCAT_HOME/webapps/ROOT/WEB-INF/classes`. The Effektif system will check your license file on startup and setup the defined number of licenses.

2.9.2 Update the Effektif configuration file

Before you can start Effektif for the first time, you need to configure some mandatory properties in the Effektif configuration file. Make sure you have copied the Effektif web application to the Tomcat's webapps directory before continuing. The configuration file can be found here `$TOMCAT_HOME/webapps/ROOT/WEB-INF/classes/effektif-onpremise.properties`.

The configuration file is a property file that contains one configuration option per line and key and value are separated by a "=". Every line that starts with a "#" is commented out and will not be considered.

In general, the configuration allows to configure the base URL of the Effektif system, the mail server, the database connection and integrations with third party systems (e.g. Signavio).

`effektif.baseUrl`	(Required) The ip address or server name (incl. the port) of the server running the Effektif Tomcat application server. E.g. http://effektif.yourdomain.com:8080. If the server is running on port 80, the port can be omitted.
`effektif.smtp.host`	(Required) The ip address or server name of the outgoing email server.
`effektif.smtp.port`	The port on which the outgoing SMTP server listens
`effektif.smtp.ssl`	If SSL should be used (true or false)
`effektif.smtp.tls`	If TLS should be used (true or false)
`effektif.smtp.user`	The username for authentication
`effektif.smtp.password`	The password for authentication
`effektif.mail.from`	This email address is used as the sender when the Effektif system sends out notifications.
`effektif.mongodb.servers`	A comma separated list of mongodb servers (hostnames). If you have MongodDB running on the same server as Tomcat, the default value of localhost is ok.
`effektif.mongodb.username`	The Effektif MongoDB user name. If you created the user following the instructions in this guide, the name is effektif .
`effektif.mongodb.password`	The password of the Effektif MongoDB user. This is the password you have defined during the user creation.
`effektif.mongodb.database`	The name of the database Effektif should use. The default value effektif is ok.

The following properties are only relevant if your Effektif installation is connected to your Signavio installation.

```
effektif.com.effektif.model.service.signavio.SignavioAuthenticationProvider.
    serviceBaseUrl
effektif.com.effektif.model.service.signavio.SignavioAuthenticationProvider.
    clientId
effektif.com.effektif.model.service.signavio.SignavioAuthenticationProvider.
    clientSecret
```

See section *Signavio integration* for more information on how to set up the integration.

2.9.3 Configure logging

The Effektif system has its own application log file `effektif.log`. You need to define the directory where this log file is stored. The directory is specified in the file `$TOMCAT_HOME/webapps/ROOT/WEB-INF/classes/logback.xml`. Open the file and update the following line:

```
<property name="LOG_DIR" value="./log"/>
```

The value should contain an absolute path. Make sure the user executing Tomcat has the required read / write permissions for the directory.

On Windows it necessary to escape all "\". An example value could like this: `"C:\\Logs\\Effektif"`.

This configuration file also enables you to change the log level in this file. By default, the log level is INFO. However, in a scenario where you require official support, you will be asked to set the log level to DEBUG. In order to so, update the following:

```
<root level="INFO">
```

Change it to:

```
<root level="DEBUG">
```

You will need to restart the Tomcat server for the changes to take effect. You can find more detailed information on how to start the Tomcat server in the next section.

The log file is configured to do a roll over. Every day, a new log file is created which contains a timestamp in the filename similar to `effektif-2014-10-09.log`. The most recent log entries can still be found in the file effektif.log. After 30 days, the log files will be removed automatically.

CHAPTER 3

Update

This section will guide you through an update of your Effektif system. It assumes you have successfully installed an early version of Effektif. If you are installing Effektif for the first time, you can skip this chapter.

3.1 Unpack Effektif

Unzip the effektif-{version}.zip to a directory of your choice, e.g. `/yourlocation/effektif-{version}` In the rest of this guide, we'll refer to the effektif home directory as `$EFFEKTIF_HOME`. The directory will contain the following files:

- *.sh - Linux shell scripts
- db - directory that contains MongoDB configuration files
  - mongodb.conf - configuration file for Linux
  - mongod.cfg - configuration file for Windows
- effektif - directory
  - ROOT - this directory contains the web application

3.2 Stop Effektif

Before you can start with the update process you have to shutdown the Effektif system. It is sufficient when you shutdown the Tomcat server Effektif is running on. You don't have to shutdown the MongoDB server. Refer to chapter *Stopping Effektif* for information on how to stop Effektif.

3.3 Backup MongoDB

Updating Effektif to a newer version might involve changes in the database schema. Therefore, you are requested to backup the database before you go on. See chapter *Backup* for more information on how to create a backup. Furthermore, the backup is necessary in case you have to revert Effektif to an older version, because changes of the database schema are in general not backward compatible. This means you cannot run an older version of Effektif with a database that was already migrated to a newer version.

3.4 Backup the configuration files

During the first setup you have modified some configuration files and added the Effektif license file. In order to preserve those changes, you have to copy those files to another location before updating the Effektif system. You can find those files in the directory `$TOMCAT_HOME/webapps/ROOT/WEB-INF/classes`.

`effektif-onpremise.properties`	Effektif configuration file
`logback.xml`	configuration file for Effektif logs
`license.xml`	Effektif license file

Simply copy the files mentioned above to another location, e.g. `$TOMCAT_HOME/webapps`.

3.5 Install a new version

In order to update the Effektif system, you have to replace the `ROOT` folder in `$TOMCAT_HOME/webapps` with the newer version you can find in the extracted directory `$EFFEKTIF_HOME/effektif`.

1. Delete the folder `$TOMCAT_HOME/webapps/ROOT` completely.
2. Copy the folder `$EFFEKTIF_HOME/effektif/ROOT` to `$TOMCAT_HOME/webapps`.
3. Copy the configuration files you have backed up in subsection *Backup the configuration files* back into the directory `$TOMCAT_HOME/webapps/ROOT/WEB-INF/classes`.
4. If you have been provided with a new `license.xml`, copy the file into `$TOMCAT_HOME/webapps/ROOT/WEB-INF/classes` and replace the existing file. Otherwise, you can keep on using the old `license.xml`.

3.6 Revisit the configuration files

Upon upgrading to a newer version, it might be necessary to update existing configuration files and add, remove, or modify some values. Therefore, it necessary that you refer to section *Configuring Effektif* and make sure your Effektif configuration file is up-to-date before starting the system again.

3.7 Start Effektif

When you have successfully installed the new Effektif version and verified that the configuration files are up-to-date, you can restart the Effektif system. Refer to chapter *Starting Effektif* for more information on how to start Effektif.

During the first startup the Effektif system will migrate the database if there are any outstanding schema changes. Therefore, the startup might take a short while depending on the size of your database. If the system doesn't become available again within minutes, please check the Effektif log file for any new error reports.

3.8 Restore an older version

In case of exceptional problems you might want to restore an older version of Effektif. Be aware, if you revert Effektif to an older version, it is not guaranteed that you can keep on using your current database. The upgrade to a newer version can involve schema changes that render the database incompatible with older versions of Effektif. In this situation, the Effektif system will not start if it detects a newer version of the database schema which it doesn't support. This is the reason why you should create a backup before updating the system.

In order to restore an older version, you can follow the instructions in this chapter again. However, instead of creating a backup you should restore an older backup.

1. Unpack the older version of Effektif, see *Unpack Effektif*
2. Stop the Effektif system, see *Stop Effektif*
3. Restore an earlier back up that was taken while the old Effektif version was deployed. See chapter *Restore* for more information on how to restore a backup.
4. Backup the configuration files, see *Backup the configuration files*

5. Install the older version in `$TOMCAT_HOME/webapps`, see *Install a new version*
6. Check the configuration files again, see *Revisit the configuration files*
7. Start the Effektif system, see *Starting Effektif*

Now, the Effektif system should be running with the older version again.

CHAPTER 4

Starting Effektif

If you have finished the setup successfully, you can go on and start the Effektif application. You can use the checklist in the next subsection to verify you didn't forget anything. The following subsection explains how to start Effektif on different operating systems.

4.1 Checklist

Before starting Effektif, use the following checklist to make sure everything is setup properly.

- Oracle Java 7 is installed
- Apache Tomcat 7 is installed
  - the Java options are configured
- MongoDB is installed
  - MongoDB is configured
  - a MongoDB user for Effektif was created
- the Effektif ROOT folder was copied into the Tomcat webapps directory
- the Effektif license was copied to the correct directory
- the Effektif configuration file was updated
  - the base URL is set
  - the mail configuration is set
  - the database connection is set
- the Effektif log file is configured

If the system is integrated with Signavio check also the following points:

- Effektif is configured in the Signavio configuration.xml
- Signavio is configured in the Effektif configuration file

4.2 Start Effektif

After completing the installation as described above, both the MongoDB database and the Tomcat application server must be started for Effektif to run properly. This section will give you more details on how to start them.

4.2.1 Windows

MongoDB

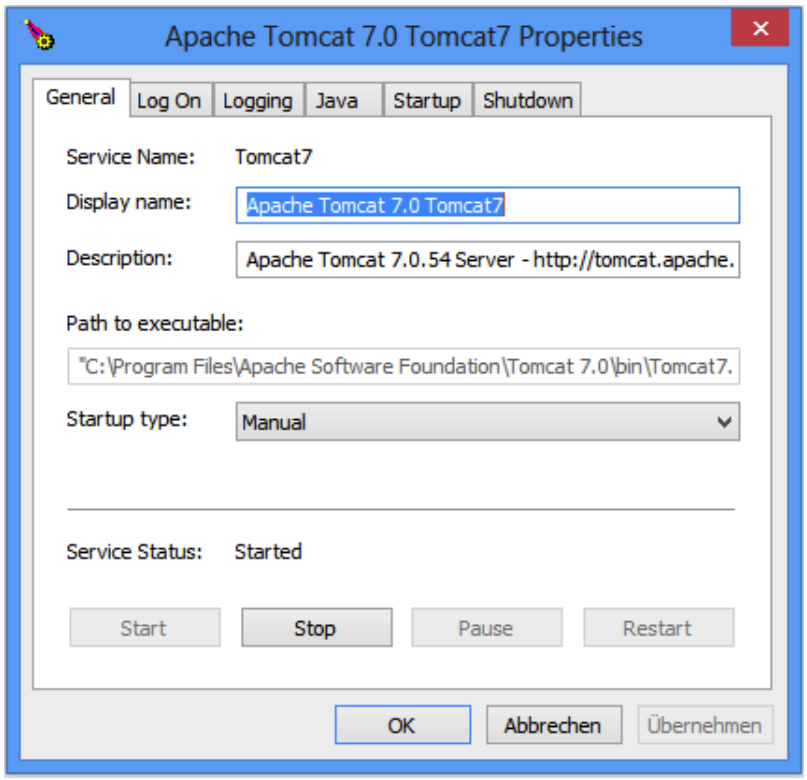
If you followed the instructions in this guide and registered a service for MongoDB, you can simply start the MongoDB server by opening a command line with administrator privileges and execute the following command:

```
net start MongoDB
```

The registration also defined the startup type of the MongoDB service as "Automatic" which means it will start automatically if you restart the Windows system. Alternatively, you can manage the MongoDB service by opening the `services.msc`. There, MongoDB will be listed among the other services and can be started and stopped.

Tomcat

Assuming you installed Tomcat using the Windows service installer, you can open the Tomcat configuration dialog again by opening the Windows start menu and selecting `Program Files\Apache Tomcat\Configure Tomcat`. The tab General contains respective buttons to start and stop the Tomcat service.



Furthermore, you have the option to define the startup type of the service. By default, this should be "Manual" which means you have to start the Tomcat server manually each time the server restarts. You can change the type to "Automatic". Then the Tomcat server will start automatically each time you restart your Windows server.

4.2.2 Debian

MongoDB

If you followed the instructions in this guide to setup MongoDB using a packet manager, some additional scripts have been installed that allow you to start, stop and restart the database very easily. Be aware, the execution of those scripts might require root privileges.

```
/etc/init.d/mongodb start
```

If MongoDB is already running, you can restart the database by executing:

```
/etc/init.d/mongodb restart
```

In order to determine whether MongoDB is running or not, you can check upon the status with the following command:

```
/etc/init.d/mongodb status
```

Tomcat

The recommended way to install Tomcat is to use a packet manager. Installing Tomcat under Debian with APT will install additional scripts to start, stop and restart the server. Be aware, the execution of those scripts might require root privileges.

```
/etc/init.d/tomcat7 start
```

You can restart the Tomcat server if it is already running by executing:

```
/etc/init.d/tomcat7 restart
```

Furthermore, you can check upon the status of the Tomcat and determine whether it is running or not with the following command:

```
/etc/init.d/tomcat7 status
```

4.3 Login to Effektif

When the Effektif system was started properly you can see the login screen by entering the URL of your Effektif installation in your browser. There are different versions of the login screen. If you purchased an Effektif standalone version, you will see a form that requires an email address and a password to login.

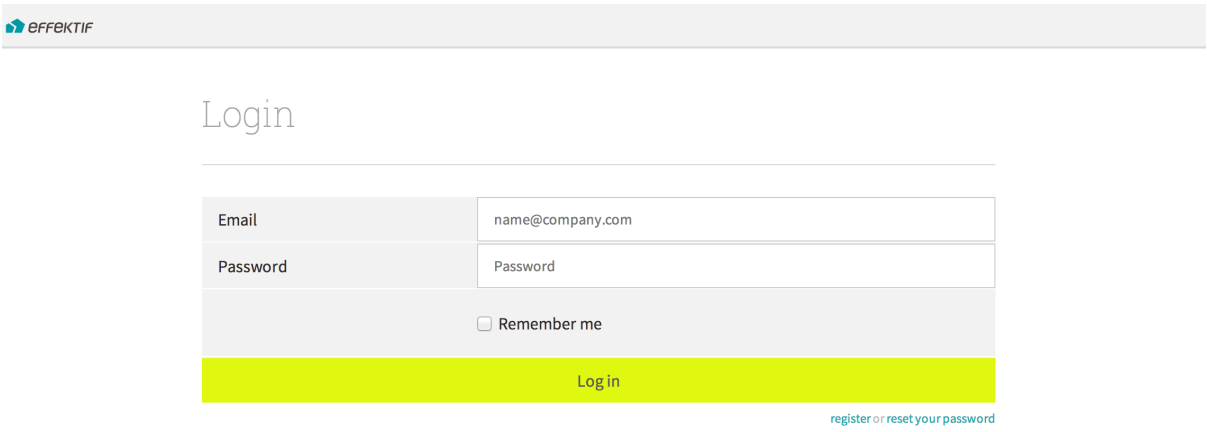


Figure 4.1: The default Effektif login screen

If you purchased Effektif along with Signavio, you will see a login screen with one button. You can login to Effektif using your Signavio account as soon as the Effektif users have been set up. Jump to section *User management* for more information on how to set up the users.

When you click *Log in with Signavio account*, you will be redirected to Signavio and asked to authorize the access of Effektif. When you click on *Grant*, you will be redirected back to Effektif and automatically logged in. The authorization dialog is only shown the first time you use this method to login.

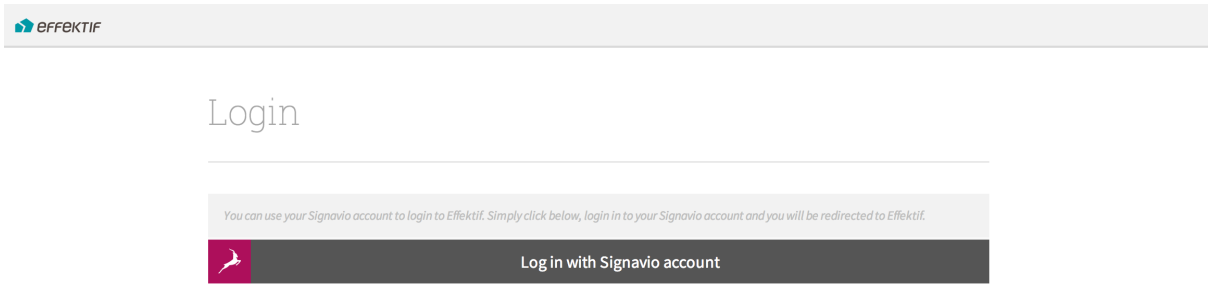

effektif
Login
You can use your Signavio account to login to Effektif. Simply click below, login in to your Signavio account and you will be redirected to Effektif.
Log in with Signavio account

Figure 4.2: The Signavio login screen

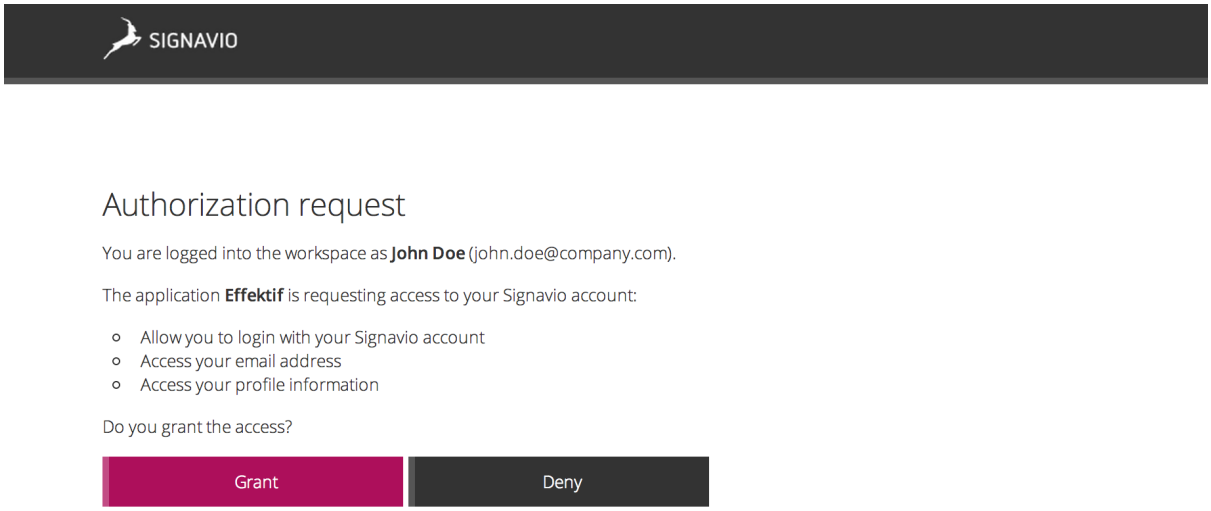

SIGNAVIO
Authorization request
You are logged into the workspace as John Doe (john.doe@company.com).
The application Effektif is requesting access to your Signavio account:
Allow you to login with your Signavio account
Access your email address
Access your profile information
Do you grant the access?
Grant
Deny

Figure 4.3: The Signavio authorization dialog

Important: You have to be logged in to Signavio in order to see the authorization dialog. Otherwise, you will be redirected to the Collaboration Portal.

4.4 Create the initial user

In case you purchased Effektif along with Signavio and want to setup the integration, you don't have to create the initial Effektif user manually. Please jump to section *User management* for more information.

Effektif users are organized in organisations. There is a maximum amount of organisations that can be registered on an on-premise system. You will find the maximum number of available organisations in your license file. When the initial user registers, he will automatically create the first organisation.

In order to register, enter the URL of your Effektif installation in your browser. You will see the login screen of Effektif.

Click *register* in the lower right corner, fill in your email address and click *Register a new user*. You will then receive an email with a link to complete your registration. After you have done that, your Effektif organisation is set up and you can go ahead and invite more users.

Every time a user registers using the register link on the login screen, a new organisation is created until the maximum amount is reached. In general, you will create one organisation and invite other users to join this organisation. The next subsection explains how to invite users.

4.5 Invite other users

In case this is an integrated installation with Signavio, please jump to section *Signavio integration* for setting up synchronization of users.

To invite other users, go to the organization configuration panel. That's located in the dropdown under your name in the top right corner named *My organization*. In section Invitations you can enter email addresses of users you want to invite. The amount of users that can be invited to your organisation depends on the number of user licenses you have acquired. All organisations on an on-premise system share the same license pool. This means the shown number of unused licenses is the same in every organisation. If one organisation invites another user the count of unused licenses in all organisations decreases.

A user can be invited to multiple organisations. If a user is part of two organisations, he will require two user licenses, one for each organisation he is part of.

CHAPTER 5

Stopping Effektif

In order to stop the Effektif system completely, you have to stop the Tomcat application server and the MongoDB database. However, if you need to restart the Effektif system, it is sufficient to restart only the Tomcat server.

5.1 Windows

5.1.1 Tomcat

As already mentioned in the section *Starting Effektif*, the Tomcat configuration dialog offers a simple way to stop the Tomcat server. Simply open the Windows start menu, select `Program Files\Apache Tomcat\Configure Tomcat`, open the tab *General* and click the button *Stop*.

5.1.2 MongoDB

If you have registered MongoDB as a Windows service, you can stop the database in two ways. Either you open the command line with adminstrator privileges and execute:

```
net stop MongoDB
```

Or you run `services.msc`, select MongoDB in the list of services and click on *Stop*.

5.2 Debian

5.2.1 Tomcat

If you installed Tomcat using a packet manager, you can simply run the following command. Be aware, the execution might require root privileges.

```
/etc/init.d/tomcat7 stop
```

5.2.2 MongoDB

If MongoDB was setup following the instructions in this guide, you can simply stop the MongoDB server by executing the following command. Be aware, the execution might require root privileges.

```
/etc/init.d/mongodb stop
```

CHAPTER 6

Backup

In order to take a backup, it is sufficient to backup the content of MongoDB. All uploaded files are stored in the database and, therefore, covered by a database backup. MongoDB comes with built-in solutions for backups. Effektif recommends to use mongodump. For more detailed information about backups of MongoDB see the official documentation:

http://docs.mongodb.org/v2.4/core/backups/

Make sure the MongoDB server is running when you want to execute mongodump. If not stated otherwise via command line parameters, mongodump will try to backup data from the locally running mongod service.

You will need to use the Effektif MongoDB user credentials again to access the data of the Effektif database. If you are using another MongoDB user to perform the backups, make sure he has the necessary roles. For the backups, the user needs to access all databases and the user data. The user should have the following roles:

- `clusterAdmin`
- `userAdminAnyDatabase`
- `readWriteAnyDatabase`
- `dbAdminAnyDatabase`

You can specify the output folder where the content of the backup is stored. Be aware, if the directory contains already an older backup, the new backup will overwrite existing files. Alternatively, you could store several backups with a timestamp.

You should make sure the backup is stored in a safe location and cannot get lost if the server fails. Keep in mind, the backups can consume a lot of space, therefore, you should add additional disk space to the server if you plan storing on multiple versions of the backup.

The following lines will show an example on how to do a backup with mongodump on different operating systems.

6.1 Windows

The `mongodump.exe` can be found in the MongoDB installation directory, `$MONGO_HOME\bin\mongodump.exe`. You just have to create a directory where the backups should be stored and make sure the user doing the backups has the necessary read / write permissions. If you followed the instructions within this guide to setup MongoDB, the command to execute mongodump would look like this:

```
C:\MongoDB\bin\mongodump.exe -u effektif -p <EffektifUserPassword> -o C:\path\to\dumps
```

In the example above, adjust the location of your MongoDB installation accordingly. The parameter -u defines the username and -p the password of the Effektif MongoDB user, replace them with your chosen values. The parameter -o specifies the output directory.

6.2 Debian

If you followed the instructions within this guide to setup MongoDB, then `mongodump` could be executed like this:

```
mongodump -u effektif -p <EffektifUserPassword> -o /path/to/dumps
```

The parameter -u defines the username and -p the password of the Effektif MongoDB user, replace them with your chosen values. The parameter -o specifies the output directory, in this case /path/to/dumps. Make sure the executing user has the required privileges to write to the output folder.

Another example will create a folder with a timestamp for every new dump:

```
mongodump -u effektif -p <EffektifUserPassword> -o /path/to/dumps/`date +"%Y-%m-%d-%H-%M-%S"`
```

The folder dumps would then contain a subfolder for every backup with a name similar to "2014-10-07-17-49-07". However, this method doesn't remove old backups.

It's good practice to take backups regularly. We recommend using cron to schedule backups. You could for instance setup `/etc/crontab` that executes the mongodump command.

CHAPTER 7

Restore

Backups can be restored using MongoDB's mongorestore. Similar to mongodump it is executed on the command line. For more detailed information on mongorestore see the official documentation:

http://docs.mongodb.org/v2.4/reference/program/mongorestore/

You will need to use the Effektif MongoDB user credentials again to overwrite the contents of the Effektif databases.

We recommend running mongorestore with the parameter –drop which will remove every collection (table) from the database before it is restored.

7.1 Windows

The mongorestore.exe can be found in your MongoDB installation directory: `$MONGO_HOME\bin\mongorestore.exe`. If you followed the instructions in this guide to setup the database, you can execute the following command on the command line:

```
C:\MongoDB\bin\mongorestore.exe --drop -u effektif -p <EffektifUserPassword> C:\path\to\dumps
```

Replace the user credentials with the ones you have chosen during the setup and the directory with the one where you store your backups.

7.2 Debian

Using Debian, the command to restore a backup stored in /path/to/dump would look like this:

```
mongorestore --drop -u effektif -p <EffektifUserPassword> /path/to/dump
```

As you can see, you have to fill in the credentials of the Effektif MongoDB user again. Furthermore, you need to specify where the backup is located.

CHAPTER 8

Tooling

This section lists some tools that might help you to administrate and maintain your Effektif installation. Use them at your own discretion.

8.1 MongoDB

A good tool to manage your MongoDB installation is Robomongo. It is free and available for different operating system. Use it at your own discretion. Please, be careful when you use a tool to manipulate the database. Effektif does not guarantee that any manipulated data can be restored. The tool can be downloaded from this site:

http://robomongo.org/

CHAPTER 9

Signavio integration

The Signavio integration with Effektif enables Signavio users to execute approval workflows for their process models using Effektif. In order to setup the integration properly, both systems, Signavio and Effektif, have to be installed. For information about installing Signavio refer to Signavio's adminstration manual. In case both systems run on the same server, you need to set up two Tomcat instances.

9.1 Setup

1. Make sure both systems are NOT running.
2. Edit the Signavio configuration file `ROOT/WEB-INF/classes/configuration.xml` which can be found in the Tomcat that hosts the Signavio system.

```
<effektif>
  <effektifServerUrl>http://your.effektif.domain:port</effektifServerUrl>
  <effektifUserName>system@signavio.com</effektifUserName>
  <effektifUserPw>yourpassword</effektifUserPw>
</effektif>
```

`effektifServerUrl`	Defines the URL under which your Effektif system is available.
`effektifUserName`	Defines the mail of the system user that will access the Effektif system. Make sure to use `system@signavio.com` to ensure the integration to work properly. The value is already preconfigured. You do NOT have to create an account for this user in any of the systems.
`effektifUserPw`	Defines the password of the system user. Remember this password, you will need to set the exact same password in the Effektif configuration file.

3. Edit the Effektif configuration file `$TOMCAT_HOME/webapps/ROOT/WEB-INF/classes/effektif-onpremise.properties` and add / update the following entries.

```
effektif.com.effektif.model.service.signavio.SignavioAuthenticationProvider.
    serviceBaseUrl=http://your.signavio.domain:port
effektif.com.effektif.model.service.signavio.SignavioAuthenticationProvider.
   clientId=com.effektif.oem
effektif.com.effektif.model.service.signavio.SignavioAuthenticationProvider.
   clientSecret=yourpassword
```

If you add any of the following properties to the configuration file, make sure to add the required prefix `effektif.com.effektif.model.service.signavio.SignavioAuthenticationProvider.` in front of the property key:

`serviceBaseUrl`	Defines the URL under which your Signavio system is available.
`clientId`	Defines the ID the Effektif system uses to identify itself to the Signavio system. Make sure to use `com.effektif.oem` to ensure the integration to work properly. This value is already preconfigured.
`clientSecret`	Defines the password the Effektif system uses to identify itself to the Signavio system. Reuse the same password that you have set in the Signavio configuration file.

4. Start both systems.
5. Activate the approval workflow feature within your Signavio workspace. Your Effektif organization will be setup automatically. For more information on how to activate the approval workflow, refer to Signavio's user manual.

9.2 User management

In case you use the Effektif OEM version that is shipped with Signavio, the user management is handled by the Signavio system. The Signavio system will synchronise all Signavio users to Effektif. Within Effektif you will not be able to register any initial user nor invite more users.

If you have purchased a standalone version of Effektif, you will be able to create an initial user and invite more users to Effektif. However, it is advised to create your Effektif organization by activating the approval workflow feature in Signavio. This way your Signavio workspace and the Effektif organization will be linked automatically.

CHAPTER 10

Troubleshooting

10.1 Where are the log files?

There are multiple different log files that yield information in case of an error scenario. The following subsections will assist you in finding the log files for every part of the Effektif application. The most important one, regarding the Effektif system is the `effektif.log`. It will contain any application related log entries.

10.1.1 Effektif

The Effektif log file effektif.log can be found in the location you configured in the logging configuration file `$TOMCAT_HOME/webapps/ROOT/WEB-INF/classes/logback.xml`. This file contains the line:

```
<property name="LOG_DIR" value="/path/to/log"/>
```

The value contains the directory of the log file. Besides the `effektif.log` the directory contains more log files for every day of the past 30 days the server was running. If you are looking for any information about incidents on a specific date, open the log file with the respective timestamp.

10.1.2 MongoDB

The MongoDB log file is configured by the logpath option. This is either defined in the MongoDB configuration file that you reference when starting MongoDB or directly as a start parameter of MongoDB. Anyway, the value of this parameter will tell you where to find the log file.

On Linux, one default location where the log file can be found is `/var/log/mongodb/mongodb.log`. Whereas a default location for the configuration file is `/etc/mongodb.conf`. Be aware, these locations can change depending on the distribution and depend on how you have installed MongoDB.

If you are using Windows and followed the instructions in this guide to setup MongoDB, you should find the log file in your MongoDB installation directory `$MONGO_HOME\logs`.

10.1.3 Tomcat

If not configured otherwise, the log files of the Apache Tomcat application server can be found either in the installation directory of the Tomcat `$TOMCAT_HOME\logs` (Windows) or a common log directory e.g. `/var/log/tomcat7` (Linux).

10.2 Common problems

This section lists some common problems that can arise during the setup of the Effektif system and gives instructions on how to solve them.

Problem: The Effektif site shows a HTTP Status 500 error including the message `root cause java.lang.RuntimeException: Cannot find license.xml`.

Solution: You have not installed the Effektif license.xml at all or placed it in the wrong directory. Jump to section *Install the license file* to solve the issue.

Problem: The Effektif site shows a HTTP Status 500 error including the message `com/effektif/EffektifServlet : Unsupported major.minor version 51.0 (unable to load class com.effektif.EffektifServlet)`.

Solution: The Tomcat server is using the wrong Java version. Effektif requires Java 7. Make sure you have installed the correct Java version. You can check your Java version by executing:

```
java -version
```

Section *Install Java* explains how to install the correct Java version.

Problem: Executing a MongoDB command yields the error message `errmsg: "unauthorized"` or `errmsg: "auth fails"`.

Solution: Either the username / password combination that is used to execute the command is wrong or the respective MongoDB user lacks some required roles.

The first issue can be checked by executing:

Windows: `mongo.exe admin -u effektif -p <yourEffektifUserPassword>`

Debian: `mongo admin -u effektif -p <yourEffektifUserPassword>`

If this command fails with the error message `exception: login failed` you know that your username / password combination is wrong. Please, make sure you spelled the username and password correctly.

In order to check the second issue, jump to section *Add a database user for Effektif*. This section lists all necessary roles and explains how to verify that the Effektif user has all the required roles. Especially the restore and backup commands require certain roles to work properly.

Problem: Effektif does not start and the log file contains the error message `INFO LockingDbExecutor Database is locked by another executor. Wait....`

Solution: The problem with the LockingDbExecutor arises when the application server is shutdown during the initialisation (update of licenses and migration of database) before the lock can be released again. You have to manually remove the respective lock from the database. It is recommened to use a tool like Robomongo for this purpose. Section *MongoDB* explains how to retrieve Robomongo and in section *How to add the Effektif MongoDB user with Robomongo* you will find an explanation on how to setup a connection to your MongoDB.

1. Open Robomongo.
2. Establish a connection to MongoDB.
3. Open the content of the Effektif DB on the left side of the application.
4. Under Collections you will find the table `properties`.
5. A double click on `properties` shows all entries. In case of an error you will see three entries, if everything is normal there will be only two.
6. Out of the three entries in the list, select the one that contains the value `schema.lock` for the key `k`.
7. Use a right click to open the context menu for the respective entry and choose „Delete Document…“ to remove the entry.

IMPORTANT: Only the entry for `schema.lock` must be deleted. You are advised to create a backup of the database upfront.

CHAPTER 11

Appendix

This chapter contains content to various topics which extend the descriptions in the administration guide.

11.1 How to add the Effektif MongoDB user with Robomongo

This section will show an alternative approach on how to create the Effektif database user in MongoDB instead of using the command line. For this approach we will use the free GUI application Robomongo to adminstrate MongoDB. See section *MongoDB* for more information on Robomongo and where to download it.

Important: This methods works only if you execute Robomongo on the same system where your MongoDB server is already running. When authentication is turned on, MongoDB will only accept connections from localhost to create the initial user.

Make sure your MongoDB server is running and open Robomongo.

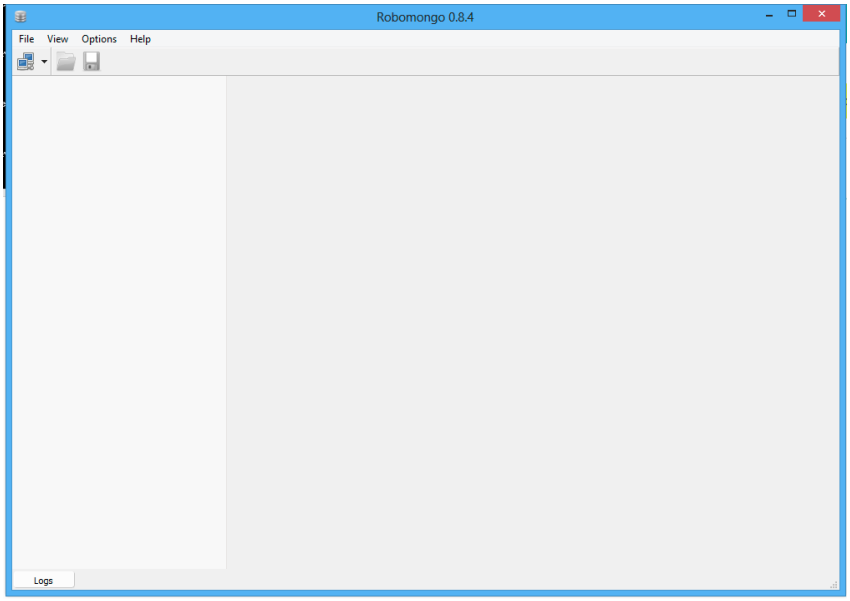


Figure 11.1: In the upper left corner click on the icon to open a new connection.

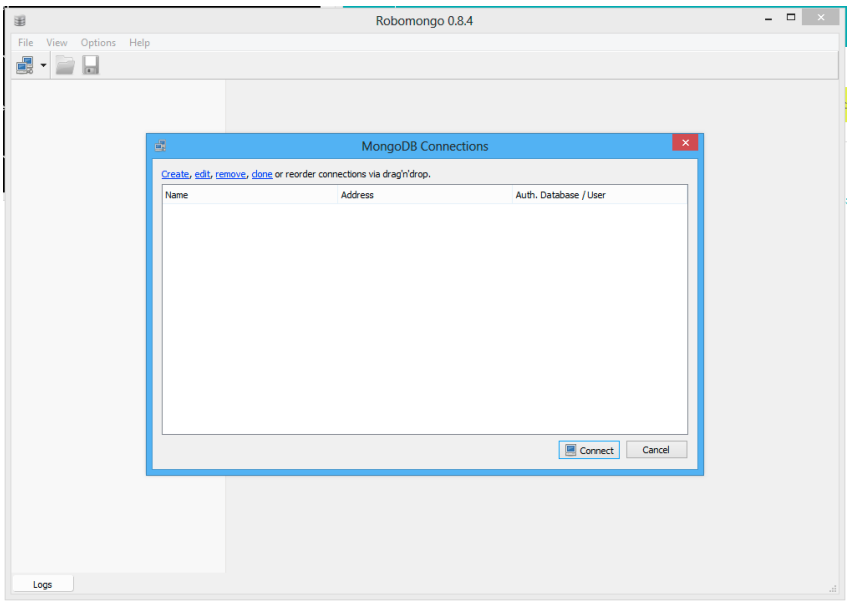


Figure 11.2: Click on the link *Create* to setup a new connection.

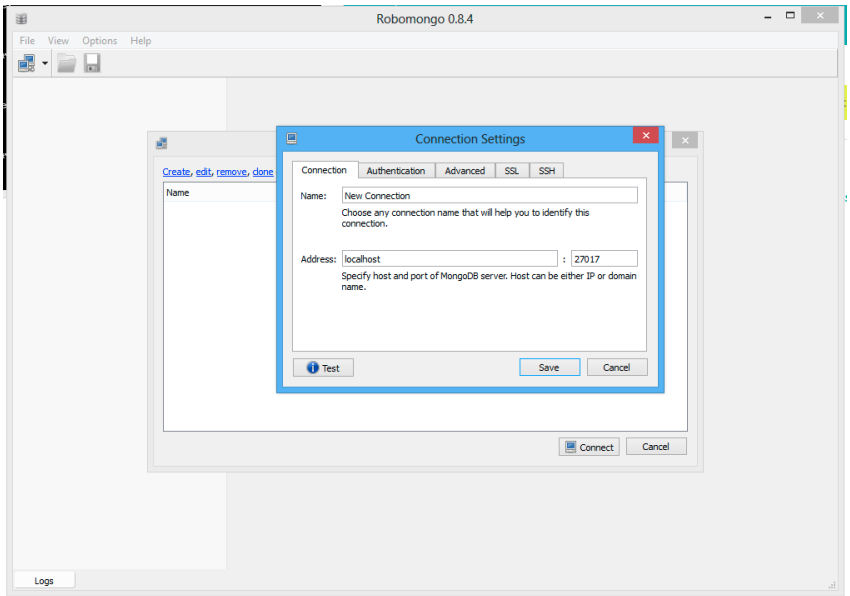


Figure 11.3: In the dialog that opens up you can rename the connection. Do not change the address and leave `localhost` there. The method explained in this guide will only work when you execute Robomongo on the same server that runs the MongoDB.

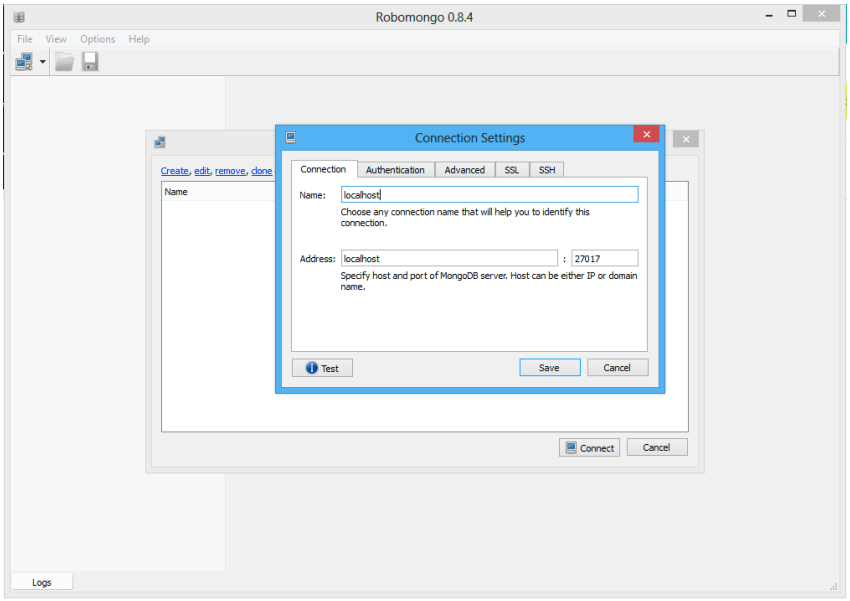

Robomongo 0.8.4
File View Options Help
Connection Settings
Create, edit, remove, clone
Name
Connection Authentication Advanced SSL SSH
Name: localhost
Choose any connection name that will help you to identify this connection.
Address: localhost : 27017
Specify host and port of MongoDB server. Host can be either IP or domain name.
Test Save Cancel
Connect Cancel
Logs

Figure 11.4: Click on *Save* to create the new connection.

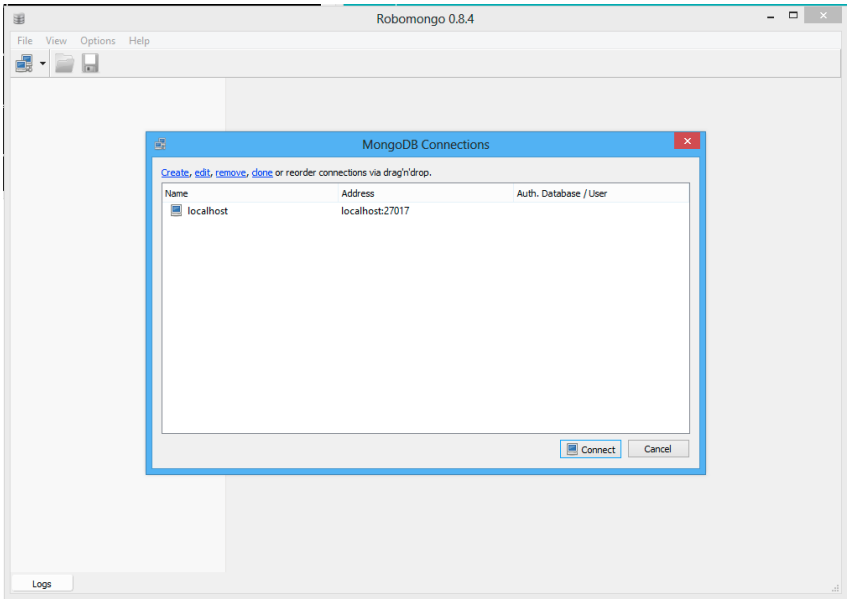


Figure 11.5: Select the new item in the list and click on *Connect*.

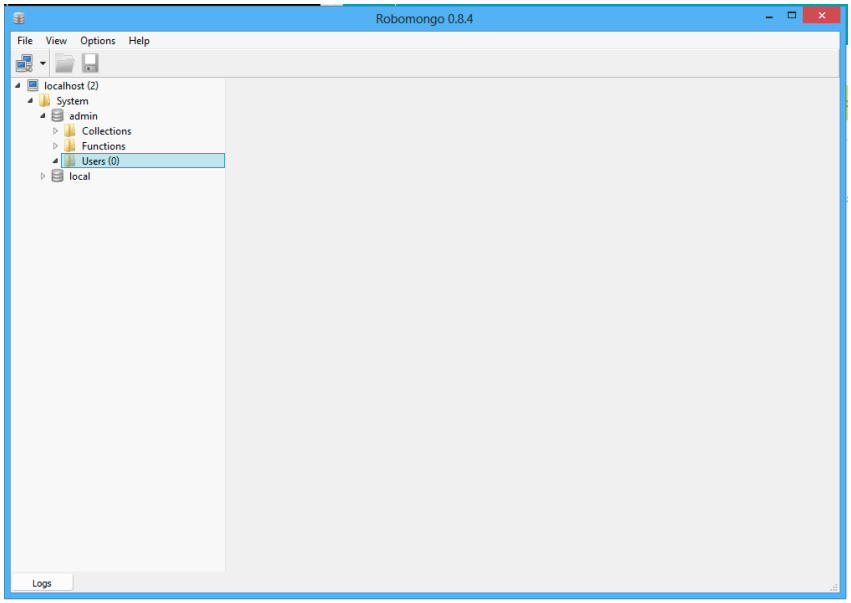


Figure 11.6: You will see the connection in the left panel. Open the folder *System* > *admin* and select the folder *Users*.

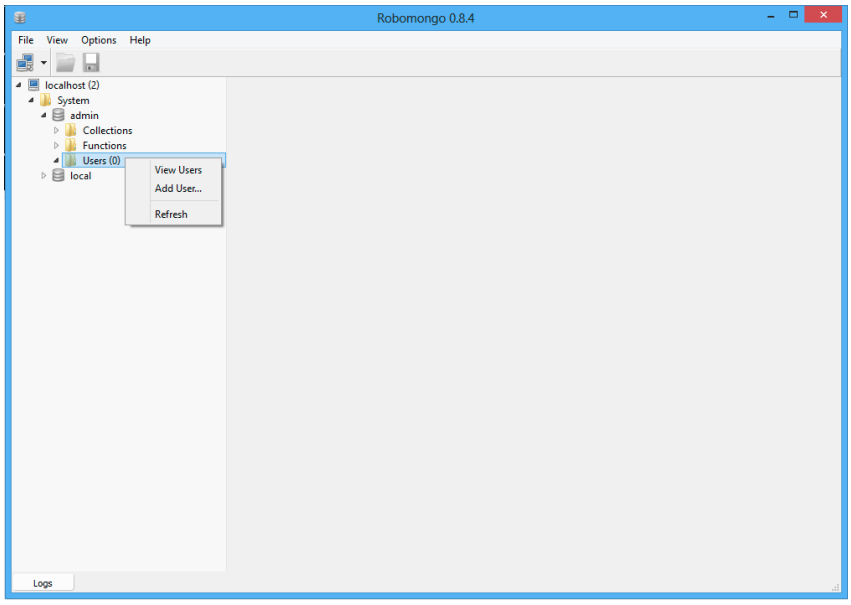


Figure 11.7: Right click on the folder *Users* and select the menu entry *Add Users...*.

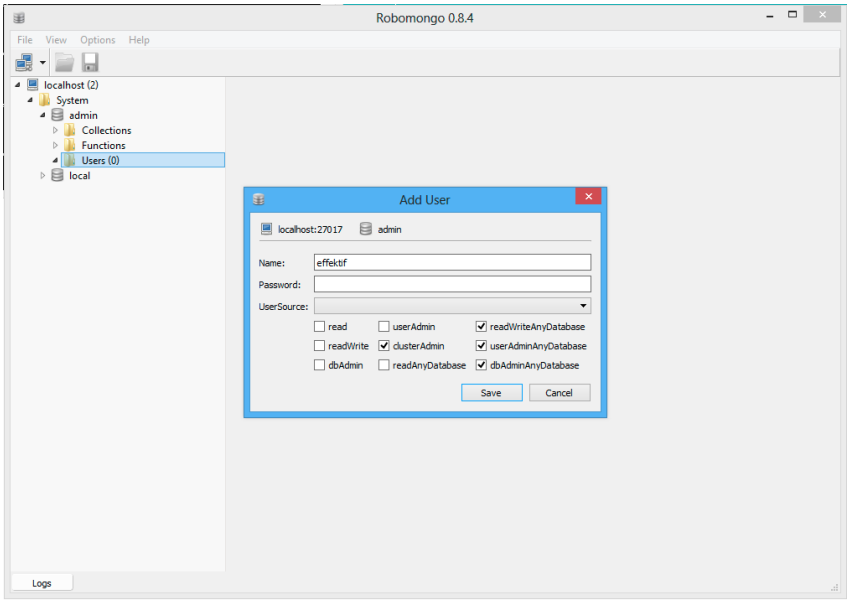


Figure 11.8: In the dialog enter the *Name* `effektif` and choose a password. Remember this password, you will have to fill it into the Effektif configuration file. Furthermore, select the four roles `clusterAdmin`, `readWriteAnyDatabase`, `userAdminAnyDatabas`, and `dbAdminAnyDatabase`. Eventually, click on *Save*. Your Effektif user has been created.

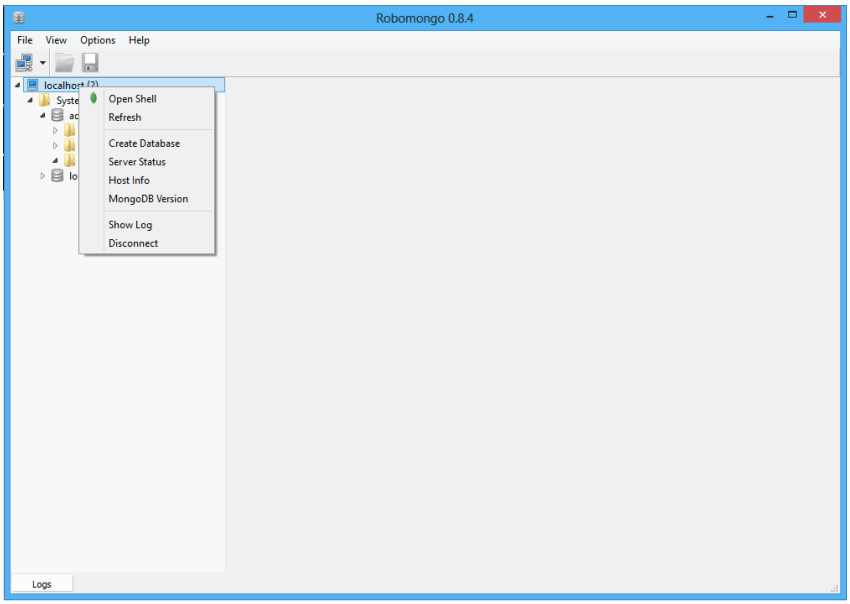


Figure 11.9: Because you created a new user, the connection to the MongoDB server now requires a user name and a password. Right click on the connection (in this case *localhost*) in the left panel and select the menu entry *Disconnect*. Afterwards, click on the icon for a new connection.

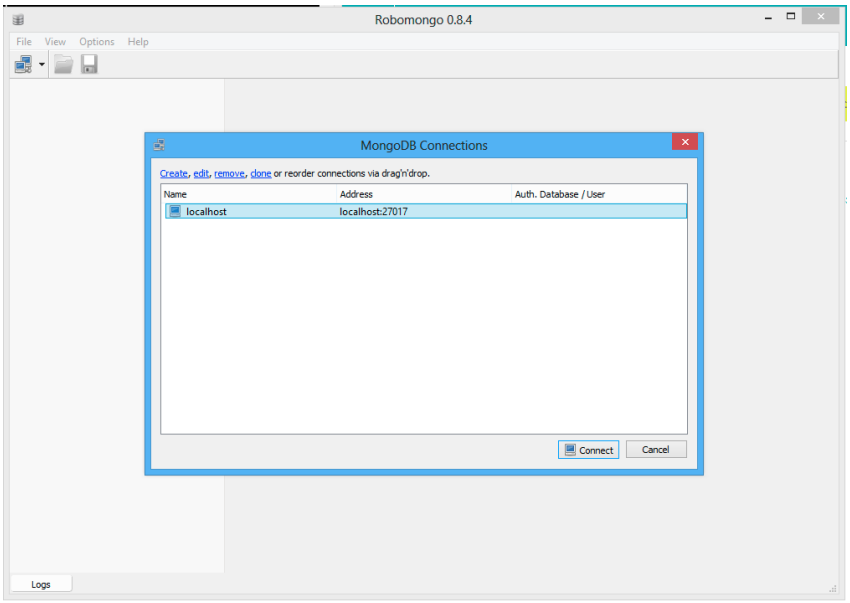


Figure 11.10: Select the connection you have created before and click on *edit*.

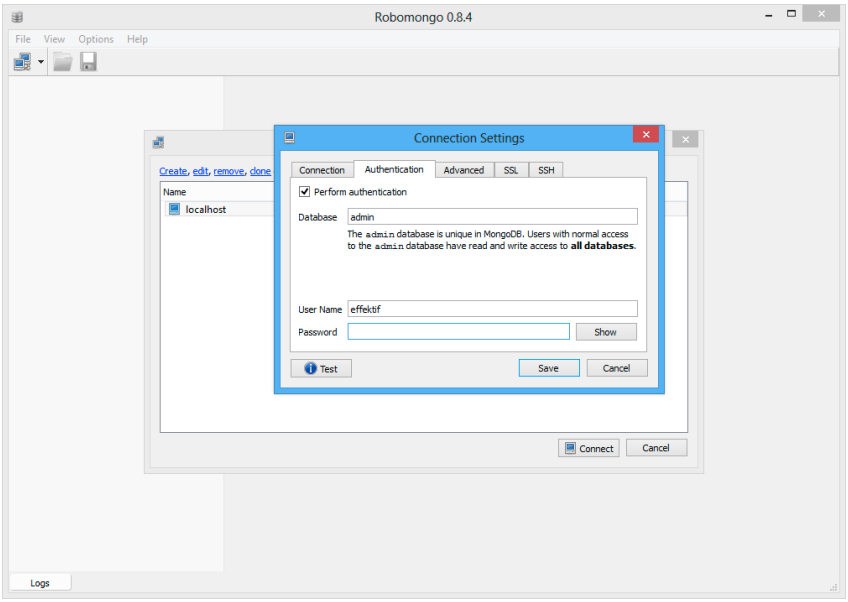


Figure 11.11: Go to the tab *Authentication* and activate the option *Perform authentication*. Then enter *User Name* (`effektif`) and the *Password* you have chosen before. Finally, click on *Save*.

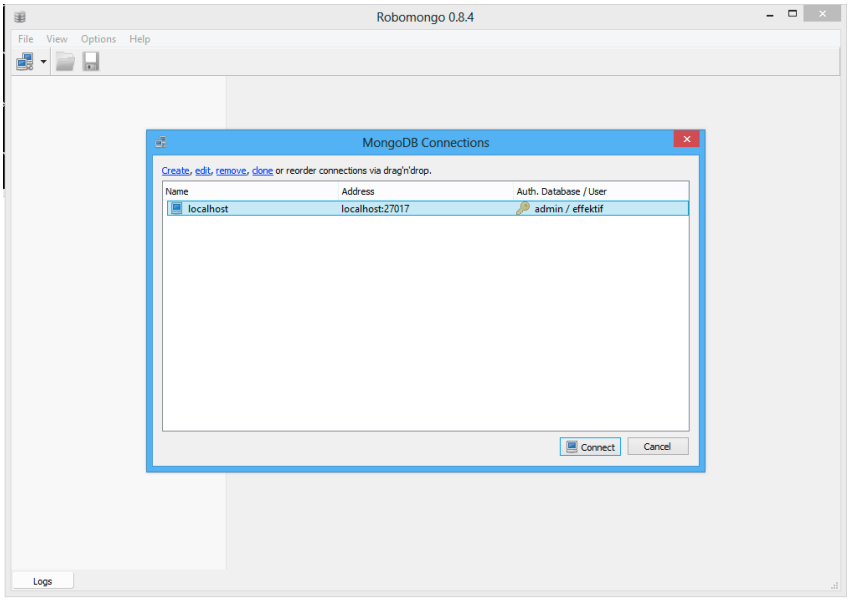


Figure 11.12: The connection indicates now that it is using the configured user credentials. If you click on *Connect* now, your connection should work again.

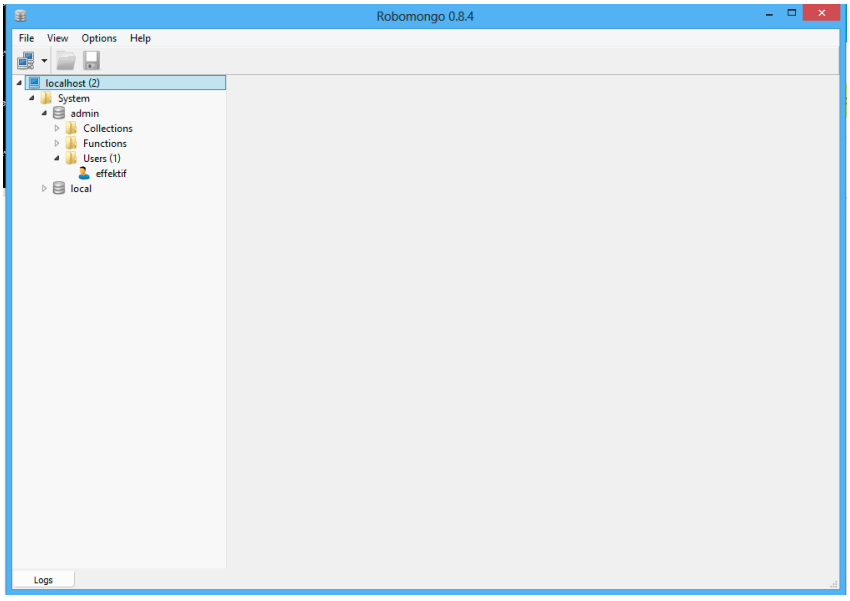


Figure 11.13: When you open the folders *System* > *admin* > *Users*, you will see the Effektif user, you have created before. If you select the user, do a right click and select the menu entry *Edit User*, you can verify the user was created with the four required roles.

CHAPTER 12

Contact and legal information

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